Table S1. Maize yield and yield components at different experimental sites in 2017 and 2018. The statistical test method was the least significant difference (LSD) method. Data shown were means ± the standard deviation.

Site	Ear length (cm)	Ear rows (row)	Line grain number (grain)	Bald tip (cm)	100-grain weight (g)	Bare plant rate (%)	Yield (kg ha^{-1})
2017							
Fuping	15.78±0.34c	14.4±0.6bc	32.1±1.0bc	0.00±0.00c	35.02±1.05b	0.98±0.68a	10441.75±39.12a
Hancheng	17.53±0.92a	15.2±0.6a	35.5±2.5bc	0.62±0.71bc	33.23±1.38c	0.07±0.16b	9846.98±93.30b
Linwei	17.78±0.52a	14.6±0.4ab	35.5±1.4bc	0.50±0.46bc	43.50±1.41a	0.00±0.00b	8346.50±433.50d
Sanyuan	13.50±0.45d	14.0±0.6bc	26.4±1.7c	0.40±0.23c	31.17±2.04d	1.50±0.33a	9020.50±57.77c
Huxian	16.62±0.37b	13.0±0.3d	32.8±0.7b	1.10±0.19b	31.07±0.67d	1.83±0.81a	8264.75±162.82d
Fufeng	15.20±0.31c	13.9±0.2bc	30.5±1.4c	1.73±0.94a	35.55±1.60b	0.00±0.00b	9217.13±139.55c
Qishan	17.27±1.06ab	13.7±1.2cd	31.7±2.3bc	–	30.40±0.82d	1.40±1.40a	8258.50±590.45d
2018							
Fuping	17.8±0.6bc	15.0±0.5b	34.8±1.8b	0.17±0.41ab	36.60±1.37b	5.38±1.52a	10140.25±67.27ab
Hancheng	17.7±0.9bc	15.7±1.2a	38.3±3.8a	0.50±0.45a	34.23±3.07c	0.02±0.04c	9867.50±62.43b
Linwei	18.8±0.5a	14.3±1.0bc	38.0±0.4a	0.00±0.00b	40.75±2.14a	0.00±0.00c	9421.25±601.04c
Sanyuan	14.9±1.4e	13.0±0.4d	31.0±3.0c	0.23±0.16ab	32.40±1.79c	2.43±1.33b	9051.00±175.62d
Huxian	18.2±0.3ab	14.6±0.2bc	38.3±0.9a	0.22±0.12ab	32.83±0.48c	1.83±0.34b	8837.00±32.45d
Fufeng	16.1±0.4d	14.2±0.2c	34.9±0.7b	0.37±0.57ab	32.88±0.35c	0.00±0.00c	10429.75±161.46a
Qishan	17.2±0.3c	14.4±0.6bc	38.5±1.1a	0.30±0.36ab	32.50±2.20c	1.32±2.17bc	7013.50±224.02e
Year	45.67**	6.32*	103.85**	20.85**	0.83	13.41**	10.40**
Site	51.31**	13.49**	27.98**	6.10**	63.04**	21.22**	130.11**
Year×Site	3.62**	5.38**	2.23*	4.86**	4.99**	9.48**	28.22**

Different letters within a column indicate significant differences between regions in 2017 and 2018.

Table S2. Pearson correlation between yield components and rainfall(mm) at different growth stages of maize in 2017 and 2018. Data shown were coefficient between two variables.

Correlation	Ear length(cm)	Ear rows(row)	Line grain number(grain)	Bald tip length(cm)	100-grain weight(g)	Bare plant rate(%)
Emergence–Tasseling	0.528	0.266	0.750**	–0.372	–0.088	0.015
Emergence–Silking	0.595*	0.212	0.789**	–0.294	–0.179	–0.001
Emergence–Maturity	0.129	–0.179	0.079	0.308	–0.48	–0.555
Tasseling–Maturity	–0.291	–0.327	–0.487	0.501	–0.292	–0.422
Silking–Maturity	–0.345	–0.301	–0.527	0.467	–0.248	–0.442
Sowing–Maturity	0.175	–0.136	0.183	0.239	–0.459	–0.54

* significant at p<0.05; ** significant at p<0.01.

Table S3. Pearson correlation between maize yield components and effective accumulated temperature (℃·d) at different growth stages of maize in 2017 and 2018. Data shown were coefficient between two variables.

Correlation	Ear length(cm)	Ear rows(row)	Line grain number(grain)	Bald tip length(cm)	100-grain weight(g)	Bare plant rate(%)
Emergence–Tasseling	–0.266	–0.234	–0.542	0.479	–0.016	–0.130
Emergence–Silking	–0.256	–0.243	–0.535	0.477	–0.042	–0.077
Emergence–Maturity	0.259	0.270	0.071	–0.021	0.208	0.093
Tasseling–Maturity	0.499	0.483	0.569*	–0.474	0.225	0.210
Silking–Maturity	0.500	0.500	0.590*	–0.501	0.250	0.166
Sowing–Maturity	0.262	0.299	0.065	–0.025	0.258	0.095

* significant at p<0.05.